

Worker Absenteeism and Employment Outcomes: A Literature Review

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We conducted a comprehensive literature review of peer-reviewed articles and other relevant publications on absenteeism and presenteeism. First, we outline the main features of absenteeism and presenteeism that would be most important to understanding their role in transitions to SSDI. Then, we discuss the current state of the literature on each of these factors. We follow this with a synthesis of common themes that arise across the multiple sub-topics we analyze, and assess remaining gaps in the literature that would benefit from future research. Several common themes emerge. First, the baseline rate of absenteeism and presenteeism for healthy workers is fairly low. Presenteeism in the workplace tends to be more prevalent than absenteeism and could be more costly to the employer. Second, mental health conditions are particularly predictive of higher rates of both absenteeism and presenteeism. Third, absenteeism and presenteeism rates and patterns vary significantly across various health conditions and worker characteristics. And finally, benefit programs have a significant impact both on individuals' propensity to be absent, and on the duration of their absences.

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1. Introduction

Worker absenteeism is one of the clearest demonstrations of the relationship between health and work. Workers may also experience productivity declines if they continue to work when sick, a phenomenon known as presenteeism. Both absenteeism and presenteeism could be due to temporary health conditions, such as the flu. However, more severe or long-lasting conditions could lead to persistent absences over time and could be an early indicator of eventual labor market exit. If it is true that increased absenteeism or presenteeism often precedes labor market exit, these trends could be informative for understanding whether workers are at an increased risk for stopping work and potentially transitioning on to Social Security Disability Insurance (SSDI). With this thought in mind, we conducted a review of the literature to ascertain the current understanding of the relationships between worker absenteeism, presenteeism, and employment outcomes.

Our review proceeds as follows. First, we outline several features of absenteeism and presenteeism that are important for understanding potential transitions to SSDI and highlight several data sets that could be used to study the relationships between absenteeism, presenteeism and later work outcomes. Then, we discuss the current state of the literature on each of these factors. We follow this with a synthesis of common themes that arise across the multiple sub-topics we analyze. Finally, we assess remaining gaps in the literature that would benefit from future research.

2. Relevant Features of Absenteeism and Presenteeism and Available Data

First, it is important to note that not all workers have paid sick leave, which is likely to have a strong effect on whether a worker misses work or continues to work while sick. The

Bureau of Labor Statistics (BLS) publishes statistics on the average number of paid sick days available to U.S. workers using data from its National Compensation Survey, although they do not provide information on sick leave *use*. According to BLS, in March 2015, 61 percent of private industry workers had some paid sick leave benefits. Of those, about 70 percent received a fixed number of paid sick days per year depending on establishment size and length of service. On average, workers in private industry received 7 sick days per year after one year of service, and 9 sick days per year after 20 years of service. The remaining 30 percent received sick leave through a consolidated leave plan combining paid time off for any use.¹

Furthermore, not all absences due to sickness would necessarily have implications for SSDI. Workers may be absent or less productive at work for many reasons, including sickness, caring for a sick relative, other family or personal obligations. Absences due to acute or minor conditions, such as the common cold or the flu, likely do not impact subsequent disability spells. Even some chronic conditions, such as allergies or migraines, likely have a small impact on future labor market participation. As a result, before understanding what features of absenteeism or presenteeism could be strong predictors of future transitions to SSDI, it is important to first establish an understanding of the baseline distribution of absenteeism and presenteeism in the general population. Information on baseline patterns would ideally include information about the share of absences due to sickness compared to other reasons and, among the absences or productivity reductions due to sickness, whether the condition leading to the absence was chronic or acute.

A related concern is that while measuring absences is relatively straightforward to do by counting the number of days missed work, presenteeism is difficult to measure objectively. Some

¹ See <https://www.bls.gov/opub/ted/2016/number-of-paid-sick-leave-days-in-2015-varies-by-length-of-service-and-establishment-size.htm> for more details.

questionnaires developed to measure presenteeism ask workers to rate their productivity on a given day or week relative to their average productivity, and then follow up and ask the reason for the higher or lower productivity. Others simply ask if an individual went to work while sick, or felt like they were less productive on the job due to sickness (see Goetzel et. al. 2004 for a review). As a result, presenteeism measures are inherently subjective and likely also measured with error.

With information on the baseline distribution of absenteeism and presenteeism, we can then analyze deviations from this baseline pattern for workers with certain characteristics, including occupation, gender, age, and certain health conditions. This variation is important to understand because there may be different baselines for certain sub-groups of the population that in and of themselves may not be indicative of future disability risk. For example, a higher rate of absence for older workers may indicate greater incidence of growing health problems, but could also reflect that older workers tend to work less, but are still able to participate in the labor force. Still, understanding these deviations can be important for determining whether absenteeism could be more or less informative about future disability risk for workers with different characteristics or different health conditions.

Ideally, it would also be useful to have information about whether there are changes in the pattern of a worker's absenteeism or presenteeism over time. If the overall level of absences is high in a given year, but has declined over the past six months, this may indicate that the worker experienced a negative health shock but has begun to recover. By contrast, if the rate of absenteeism has slowly increased over the course of several months and is higher than in previous years, this pattern could be more indicative of a growing health problem. The rate of progression and timing of the increase in absences may vary across individuals and across health

conditions, so changing trends over time would likely need to be interpreted in tandem with other information about the individual's health in order for it to be informative about disability risk.

After identifying key characteristics by analyzing baseline patterns, progressions and deviations from baseline patterns of absenteeism and presenteeism, this information would ideally be mapped to data on transitions out of the labor force and potentially onto disability insurance. This data could then be used to predict labor force exit for individuals exhibiting certain patterns of absenteeism and presenteeism. They could also be used to understand what forms of early intervention could be effective in reducing or slowing absenteeism and presenteeism rates, with the eventual goal of enabling workers to stay in the labor force longer.

Thus, an ideal research design for predicting the effect of absenteeism and presenteeism on disability transitions would utilize longitudinal data on worker absence rates, occupation, and health characteristics allowing for comparisons between peers and over time, and matched to information on labor force participation and SSDI claiming activity. In practice, such data are not readily available. Table 1 summarizes several publicly available data sets with at least some measures of absenteeism and/or presenteeism. Note that each survey has strengths as well as limitations, but no one survey is ideally designed to study the relationship between absenteeism, presenteeism and subsequent work outcomes in the general population.

The survey that likely comes closest to the ideal is the Medical Expenditure Panel Survey (MEPS), which includes measures of absenteeism and access to paid sick leave, along with extensive medical provider data, and follows individuals over a two year period. However, the MEPS lacks measures of presenteeism and does not allow for longer follow-up of work outcomes. The Health and Retirement Study (HRS) contains measures of absenteeism (since 1992) and presenteeism (since 2008) and follows individuals every two years into the present

period; however, the HRS only studies individuals ages 50 and older. The Midlife Development in the U.S. (MIDUS) study and National Comorbidity Survey (NCS) have long follow-up periods, but are potentially outdated and, in the case of NCS, contain only mental health measures.

More recently, the American Working Conditions Survey (AWCS) was fielded in 2015 on a nationally representative Internet panel and includes extensive questions about health-related work absences, paid vs. unpaid sick leave available and taken, and measures of presenteeism, as well as detailed data on work-limiting health problems and workplace accommodations. Follow-up measures were collected six months later for all respondents and twelve months later for respondents aged 50+ in 2015. A planned three-year follow-up for all respondents in 2018 would allow researchers to connect absenteeism and presenteeism rates with subsequent work outcomes including labor force exit and self-assessed disability.

Cross sectional studies such as the National Health Interview Survey (NHIS) and American Time Use Survey (ATUS) can be used to establish baseline rates of absenteeism and presenteeism in the general population at a given (recent) point in time. In particular, the NHIS asks “During the PAST 12 MONTHS...ABOUT how many days did you miss work at a job or business because of illness or injury (do not include maternity leave)?” The NHIS also asks whether the respondent has paid sick leave on their main job, although they do not ask how many of the days missed were paid vs. unpaid, nor do they ask about working while sick. In 2011 the ATUS administered a Leave Supplement which collected data on absenteeism and presenteeism (specifically, if one “needed to take leave but did not”) in the past week, where weeks surveyed were evenly distributed across the year. The main drawback to this sampling design is that, while

sick days per week can be aggregated across the year to estimate average sick use per year, it cannot tell us anything about individual usage patterns during the year.

In addition to nationally representative surveys, employer-based surveys are commonly developed to measure absenteeism and presenteeism for employees at a given company (see, Goetzel et. al. 2004, Burton et. al. 2005 and Schultz and Edington 2007 for a summary of these measures). One concern with such surveys is that workers may be reluctant to report their absences or productivity declines on an employer-based survey despite confidentiality agreements. Furthermore, absence rates measured from a single employer survey may not be fully generalizable to the broader population.

Of course, a drawback of the above data sets is that surveys rely on worker recall and responses about their prior absence rates and productivity, which at the very least are likely measured with error. With that in mind, an ideal data source might be derived from administrative data from employers on absence rates; however, to our knowledge a comprehensive database of this information does not exist in the U.S. Data from some European countries with centralized sick leave systems are able to come closer to this ideal, although even these administrative databases tend to exclude the shortest sick leave spells, which are often covered by the employer.

Due to these challenges, any one study alone provides only part of the overall baseline picture of absenteeism and presenteeism rates in the population. However, reviewing several studies together begin to provide a more complete picture of the current landscape of absenteeism and presenteeism. In the next section, we present the current evidence on each of these independent pieces and attempt to draw a common thread between them.

3. Summary of Current Literature on Absenteeism and Presenteeism

3.1. Methodology

We conducted a comprehensive literature review of peer-reviewed articles and other relevant publications on absenteeism and presenteeism. To conduct the review, we utilized several search databases including Econ Lit, Google Scholar, EBSCO, JSTOR, Social Science Abstracts, and PsychInfo. We used a similar set of search terms for each database. Table 2 presents the list of search terms we used, as well as the databases searched. Once relevant articles were selected, we reviewed the reference lists to collect additional citations that were not identified directly by our search terms.

We first selected articles based on topical relevance as related to our search terms. Next, we narrowed the list of selected articles based on scientific quality. We assessed quality factors such as sample selection, generalizability, and methodology. We limited the search to articles that were published after 2000. Our search put greater emphasis on articles based in the United States, although we identified a strong body of research based in Europe, and a few articles in Canada and Australia. In our discussion below, we highlight the body of research developed in the United States where possible. However, some topics, in particular the transition from absenteeism to longer term disability, are primarily examined in the European context. We provide a comprehensive list of all articles meeting our criteria in the bibliography.

3.2. Baseline Patterns of Absenteeism and Presenteeism

We first provide an overview of the empirical evidence on baseline absenteeism and presenteeism rates in the general population, summarized in Table 3. The most relevant study for establishing such a baseline is a recent working paper by Ahn and Yelowitz (2016), who present

the distribution of absences using data from the NHIS. They find that on average Americans take 3 to 3.7 sick days per year, depending on whether or not they have access to sick leave. The authors also present the distribution of absences for administrative workers, the main analysis sample in their dataset, and that overall absences in the population are fairly low, but a small group has very high rates of absence. The 90th percentile of the absence distribution is 8 days per year, while the 99th percentile is 60 days per year.

Using a nationally representative sample of American adults from the ATUS, Susser and Ziebarth (2016) analyzes absence rates, rather than the number of absences in a year, and estimates that approximately 4.8 percent of employees take sick leave on any given week, and approximately 3 million, or 2 percent of employees engage in presenteeism on any given week. Based on survey data from a large national employer in the Northeast, Boles et. al. (2004) estimates that approximately 1.8 percent of employees were absent due to sickness in an average workweek, while 6.6 percent of employees were less productive due to health reasons. These differences could reflect employer, regional or industry-specific factors that may affect absenteeism, or recall bias in the ATUS. Kessler et. al. (2001) uses the MIDUS survey and estimates that approximately 22 percent of respondents report at least one day of missed or reduced work in the past month.

Aggregating over an entire year, Davis et. al. (2005) analyzes data from the Commonwealth Fund Biennial Health Insurance Survey, a national survey of Americans ages 19-64, and estimates that 64 percent of Americans take at least one sick day in a given year, and 20 percent take 6 or more sick days in a given year. Importantly, the survey question in this study asked if workers took leave for their own sickness or for a family member, so these numbers could represent an upper bound on worker absenteeism due to their own health. Howard and

Potter (2014) analyzes missed work in the NHIS and note that over half of survey respondents do not report missing any work days in the last year. Among the remainder who do report missing work days due to illness, the majority of these respondents reported missing between 2 and 6 work days. Using the HRS, Xu and Jensen (2012) estimates that individuals over age 50 are absent from work for 11 days per year, on average. Susser and Ziebarth (2016) also document higher rates of absence and presenteeism among women.

By comparison, Garcia and Malo (2014) presents data from the European Community Household Panel Survey on the distribution of absenteeism rates for several European countries, including Ireland, Italy, Greece, Spain, Portugal and Austria. Across all these countries, absence rates for those without disabilities ranged between 0.5 and 0.8 days per month, while absence rates for individuals with disabilities was higher, ranging from 0.9 to 2.8 days per month.

Turning to presenteeism, Burton et. al. (2005) examined the distribution of presenteeism in a large national company by the number of reported health risks (defined as “lifestyle, biological, or psychological factors that may predispose an individual to illness”), and found that individuals with 0-2 health risks reported a 15 percent productivity loss due to presenteeism in the prior two weeks, individuals with 3-4 health risks experienced a 21 percent productivity loss, and individuals with 5 or more health risks experienced a 27 percent productivity loss over the prior two weeks. They estimate that approximately 63 percent of their study population has 0-2 health risks. Callen et. al. (2013) analyzes data from a large employer in Tennessee and finds that approximately 22 percent of employees reported some degree of presenteeism in the past month. Further analysis shows that 9 percent of employees reported one productive day due to illness in the past month; 7 percent reported two unproductive days, 5 percent reported 3-5 unproductive days, and 1 percent reported 6-8 unproductive days in the past month. While these studies have

slightly different measures of presenteeism, they both demonstrate moderate distributions of presenteeism in the overall population, with a small minority of workers reporting high rates of presenteeism.

3.3. Deviations from the Baseline Patterns of Absenteeism and Presenteeism

The aforementioned studies establish that fairly low rates of absenteeism and moderate rates of presenteeism are to be expected in the general population. Of course, certain health conditions and health behaviors will increase or decrease these rates. Goetzel et. al. (2004) uses employee surveys of absence and presenteeism identify health conditions that yield the highest costs to an employer. They find that allergies, arthritis, hypertension, migraines and depression are the conditions with the highest rates of presenteeism, while cancer, depression and respiratory disorders are found to have the highest rates of absenteeism. Furthermore, the authors find that presenteeism is more commonly reported than absenteeism, and that presenteeism has higher costs to the employer were higher than absenteeism. Schultz and Edington (2007) review existing literature on presenteeism and also find that allergies and arthritis are among the most common conditions leading to presenteeism. Below we highlight several studies that are informative of absenteeism and presenteeism for specific subpopulations, summarized in Table 4.

A collection of papers focuses on the effect of mental health conditions, finding that conditions such as anxiety or panic disorders, depression, and other psychiatric conditions are associated with both higher presenteeism and absenteeism. Peng et. al. (2016) estimates in the MEPS that depressive symptoms increase absence days by 33 percent, or an additional 1.4 days per year, and reduce the probability of employment at the time of survey by 2.4 percentage

points. Kessler et. al. (2006) uses the NCS to estimate that, combining the effects of absenteeism and presenteeism, individuals with bipolar disorder miss approximately 65 work days in a year, and those with depression miss 27 work days a year, on average. While these statistics combine the effects of absenteeism and presenteeism, the authors note that presenteeism is the most important factor driving missed work for this population. Collins et. al. (2005) also identifies depression and anxiety as the two conditions with the highest associated absenteeism and presenteeism costs to the employer, based on a survey of employees. Banerjee et. al. (2017) and Pelletier et. al. (2009) also document that mental health conditions are associated with higher levels of absenteeism.

Several studies also identify cancer, COPD, and heart disease as conditions with high absenteeism rates (Kessler et. al. 2001, Anesetti-Rothermel and Sambamoorthi 2001). Other conditions associated with higher absence rates include arthritis (Muchmore et. al. 2003), gastrointestinal issues (Cohen et. al. 2015), obesity and diabetes (Pelletier et. al. 2009, Howard and Potter 2014). Furthermore, Burton et. al. (2005) documents a relationship between the number of conditions and the extent of presenteeism: they estimate an additional 2.4percent decline in productivity for each additional health condition reported by the employees in the study.

A series of studies also examine health behaviors that can either mitigate or increase absenteeism and presenteeism rates. Sherman and Lynch (2013) surveys employees at a large Midwestern company and documents that smokers have higher rates of absenteeism and presenteeism than non-smokers; on average, smokers were absent 8 days in a year, compared to 6 days for non-smokers. Several other studies identify that higher body weight and physical inactivity tend to be associated with higher absenteeism rates (Schultz and Edington 2007,

Anesetti-Rothermel and Sambamoorthi 2001, Howard and Potter 2014, Boles et. al. 2004). High stress and lack of emotional fulfillment are also commonly cited reasons for presenteeism (Boles et. al. 2004). Burton et. al. (2006) documents that each additional risky behavior decreases productivity by an additional 1.9 percent.

When analyzing these findings, it is important to keep in mind the fact that higher rates of absenteeism or presenteeism for individuals with certain characteristics does not necessarily imply that absenteeism is a predictor of disability, above and beyond the problems already associated the health condition. In some cases, in fact, higher rates of absenteeism may enable a worker to manage a condition over the long term, while remaining connected to the work force. Most of the cited studies were analyzed in the cross-section, which does not enable analysis of how the condition, or associated absenteeism rates, progressed over time.

3.4. The Role of Absenteeism and Presenteeism in Transitions to Long Term Disability

A natural question following the analysis of variation in absenteeism and presenteeism rates is whether this variation is informative about future disability spells. While there is a strong body of research on this question in the European context, there is relatively little information addressing these issues in the U.S. This is mainly due to data limitations, since European sickness benefits systems often cover both short and long-term sicknesses, meaning the data to measure worker absenteeism and disability spells is often contained in one place (McVicar et. al. 2016). The centralized nature of sick leave in Europe also standardizes practices across employers and aggregates the data at the national level, rather than having employer-specific sources of data. The centralized social insurance data in many European countries also allows for

panel data analysis of the same individual at different points in time, another challenge in the U.S. context where data is disaggregated and often collected through one-time surveys.

There are a handful of relevant statistics in the U.S. context. For example, Muchmore et. al. (2003) uses a proprietary database that aggregates employment, health, and disability records from several employers to study the effect of arthritis on sick leave and disability patterns. They estimate that individuals with arthritis, which represent 15 percent of the employee population surveyed in their study, are 150 percent more likely to file a short-term disability claim, and 86 percent more likely to file a long-term disability claim, than individuals without arthritis. Anema et. al. (2009) conducted a cross-country panel survey of individuals with back pain, focusing in particular on those individuals whose back pain had kept them out of work for three months. They found that among those individuals with short-term absences for back pain, 49 percent of U.S. respondents had returned to work two years later, compared to a low of 22 percent of respondents in Germany, and a high of 62 percent in the Netherlands.

The majority of evidence on this topic, however, comes from Scandinavian countries and often supplements administrative data from social insurance records with survey data to measure presenteeism and collect additional data on absences. Many papers in this literature find that sick leave and worker absences are a strong predictor of future disability pension take up (e.g., Kivimaki et. al. 2007, Wallman et. al. 2009, Gjesdal and Bratberg 2003). Several papers find strong evidence that sick leave for mental disorders in particular is an important predictor of future disability pension take up (Kivimaki et. al. 2007, Karlsson et. al. 2008, Vaez et. al. 2007). Several papers in this literature find that the relationship between absence and disability spells is strongest for absences spells with long durations, in the range of approximately 200 days or more (Andren 2007, Wallman et. al. 2009, Gjesdal and Bratberg 2003). In a related set of studies,

Bergstrom et. al. (2009a) finds that sickness presenteeism on at least five occasions as measured in a baseline survey increases the probability of poor health in subsequent survey waves.

Bergstrom et. al. (2009b) further documents that presenteeism a significant predictor of future sickness absenteeism of more than 30 days, 2-3 years after the baseline survey. Other common predictors of transitions to long term disability identified in these studies include age, low income/socio-economic status, and weak labor force attachment (Karlsson et. al. 2008, Vaez et. al. 2007, Gjesdal and Bratberg 2003).

3.5. Early Interventions

There is a robust literature analyzing the extent to which policies influence absenteeism, and to a lesser extent presenteeism. Again, the majority of evidence on these policies comes from Europe, where the provision of sick leave and associated policies are more standardized. However, the findings from this literature can be important for understanding potential policy considerations in the U.S. context. For example, if workers have different patterns of leave taking depending on whether or not they have access to paid leave, it is important to distinguish these patterns from increased leave taking due to a worsening health condition. Below, we review the literature on a variety of potential interventions.

Provision of paid leave. Zimmer (2013) analyzes the relationship between health shocks, access to paid leave, and labor force participation in the MEPS. Not surprisingly, the author finds that a major health shock decreases labor force participation. However, the paper also documents that there is a stronger association between a health shock and decreased labor force participation for individuals with access to paid leave. Given the growing interest in increasing the provision

of paid leave, it is important to understand the extent to which sick leave policies influence worker behavior.

Some papers analyze the effect of changes in short-term sick leave policies on absences by examining changes in waiting periods for sick leave, a common feature of sick leave policies in Europe. Petterson-Lindbom and Thoursie (2013) finds that eliminating the waiting period and increasing the generosity of sick leave is associated with a 11 percent increase in reported sick leave spells. This study provides evidence of an increase in claiming on the *extensive* margin, which could represent a moral hazard response, or simply the fact that the elimination of the waiting period ended up covering short claims that otherwise would not have been eligible for benefits. On the other hand, Pollak (2017) finds that providing compensation for French workers during the waiting period decreases the duration of sickness absences by nearly 3 days. Here, a waiting period may induce individuals to *extend* their sick leave spells in order to qualify for paid leave, indicating movement on the intensive margin. Johansson and Palme (2002) examines a policy change in the generosity of sick leave in Sweden and finds that both the incidence and duration of absences decreases when the generosity of sick leave decreases. Henrekson and Persson (2004) demonstrates that absenteeism is sensitive to the generosity of sick leave, and importantly, that the strength of this relationship varies with the business cycle. During economic busts, workers tend to be absent less frequently – perhaps in an attempt to bolster their connection to the employer and avoid being laid off. These findings suggest that access to paid leave is an important factor determining absence rates, and should be taken into consideration when analyzing absence patterns.

Evidence that individuals change the duration of their absences depending on their access to, or the generosity of, sick leave, could also be evidence of moral hazard – in other words,

individuals may exaggerate their illness or take sick leave when they are not actually sick. However, Ziebarth (2013) studies the effect of a cut in sick pay on long-term absences in Germany and does not find any evidence that the change in sick pay has an effect on the duration of absences for those on long-term sick leave, indicating that there is likely little moral hazard in this population. Importantly, Ziebarth (2013) examines individuals with much longer sickness spells, while the response induced by other policies such as changes in the waiting period would instead be driven by individuals with short sickness spells.

Stricter screening. Another way to limit health-related absences from work is to limit the set of individuals who could be eligible for paid leave. This consideration is most relevant in the context of disability programs, rather than sick leave programs, but can have indirect effects on absenteeism as well. For example, Staubli (2011) finds that stricter screening for disability programs in Austria reduced DI take up, but also led to a 0.7 percentage point increase in taking sickness insurance benefits. This finding suggests that there could be some substitution between the two programs, in particular for individuals who may be on the margin of eligibility for disability insurance. Lidwall (2013) finds a related result following an increase in sick leave stringency in Sweden: stricter sick leave policies led to higher rates of sick leave termination and increased rates of disability claiming, in particular for women. Hagglund (2013) analyzes the effect of time limits in sickness benefits in Sweden, and finds that the time limits led to significantly higher exits from sick leave at the point when benefits would have been exhausted, on average reducing absences by 0.27 days. de Jong et. al. (2011) analyzes an experiment to increase the stringency of long-term sickness benefits in the Netherlands and find that while the increased stringency led to an increase in *applications* for disability, the authors do not find evidence of a significant increase in actual *transitions* to disability programs.

Partial disability/graded sick leave. Paid sick leave and partial disability could be viewed as falling on a continuum of policies enabling workers to take time off to manage a health condition while still remaining connected to the labor force. There has been some recent innovation in the area of partial benefits, again concentrated in Europe. Markussen et. al. (2012) analyzes extensive Norwegian administrative data to assess how the introduction of a partial disability program affected the duration of sickness absence spells and transitions to long-term disability. They find that switching to a graded absence program, which links the extent of paid leave to the extent to which the health condition limits work, led to significant reductions in absence durations and reductions in the incidence of new absence spells. Coincidentally, they found that this policy change also led to increased labor force attachment among temporarily disabled workers, increasing the propensity of employment two years in this group by approximately 16 percentage points. Schneider et. al. (2016) also find that a partial, or rated return to work program increases the probability of return to work among those with the longest sickness spells.

Health Care. Health insurance is of course large-scale policy that affects worker health and could have an impact on absenteeism and presenteeism. Better access to health care could promote better health and thus reduce absenteeism and presenteeism. However, Xu and Jensen (2012) analyzes this relationship in the HRS, and do not find evidence that access to health insurance has a significant impact on worker absenteeism. Instead, health status itself is a much stronger predictor of absenteeism. Johnson et. al. (2006) studies the extent to which the type of care – namely, network-based care or non-network care, affect the duration of recoveries for individuals receiving workers' compensation insurance. They find that individuals receiving network based care tend to have longer absences following a workplace injury or illness, but this

relationship is likely driven by the fact that individuals receiving network care tend to have more severe injuries. These studies do not provide strong evidence that better health care has an effect on absenteeism above and beyond the effect of the health condition for which the individual is receiving care. However, this finding should be verified with future research.

Vocational Rehabilitation. Employers may also be able to intervene by providing training, vocational rehabilitation (VR) or other accommodations that enable a worker to better perform his or her duties, and thus reduce absenteeism and longer spells away from work. However, the effects of these programs should be interpreted with care. Engstrom et. al. (2015) analyzes an RCT in Sweden that randomized workers who were entering sick leave into VR programs, and found that the program had mixed effects – for those in fairly good health or stronger labor force attachment, VR enabled successful returns to work, while they found evidence of a “locking in” effect for individuals in worse health who were randomized to receive VR. The authors hypothesize that for these workers, VR may have provided information about, and thus encouraged use of, other disability benefit programs. Holm et. al. (2017) analyzes a similar series of ‘active labor market’ programs in Denmark. They find that while education and training programs had a positive and significant effect on employment, less formal education programs had a negative effect on employment, further evidence of a potential lock-in effect.

Health promotion and wellness initiatives. Health promotion and wellness initiatives in the office could be a light-touch intervention to reduce absenteeism and presenteeism. In a large scale RCT, Bertera (1990) analyzes the impact of the introduction of a health and wellness program in an industrial manufacturing company, and analyzes data before and after the program introduction across treatment and control sites. He estimates that the health program is associated with a reduction of 0.4 sick/disability days per employee. Pelletier et. al. (2009) analyzes the

impact of a wellness program introduced in a large national employer and finds that individuals who reduced one health risk due to the wellness program experienced a 9 percent decline in presenteeism, and a 2 percent decline in absenteeism. Both of these studies are based in one employer, raising questions about generalizability. However, they do suggest that promotion of general health and wellness can have significant effects on workplace performance.

4. Synthesis of Common Themes in the Literature

There are several common themes that arise from this body of literature on absenteeism and presenteeism. First of all, the baseline rate of absenteeism and presenteeism for health workers tends to be fairly low. However, the extensive variation in absenteeism and presenteeism across various health conditions highlight that context is important. For example, mental health conditions appear to be particularly predictive of higher rates of both absenteeism and presenteeism. Rather than comparing all individuals against one common baseline rate of absenteeism across the population, it could be more realistic to compare individuals against standard absenteeism rates for other individuals in their occupation, or other individuals in similar health. Among the studies that do find evidence of a link between absenteeism and future disability spells, this link appears to be strongest for individuals with very high absences (e.g., over 100 days per year) in the years prior to entering disability. While there is some variation in baseline absence rates for workers with certain health conditions or characteristics, any absence length of 100 days or more demonstrates a clear deviation from the baseline distribution of absences.

Despite the potential variance in measurement of presenteeism, a number of studies come to the general conclusion that presenteeism in the workplace is more prevalent than absenteeism

and could be costlier to the employer (e.g., Goetzel et. al. 2004, Kessler et. al. 2006, Caverly et. al. 2007). Additionally, disability benefit and paid leave programs have a significant impact on individuals' propensity to be absent, and on the duration of their absences. There is also evidence of interactions between programs, although this evidence is based primarily in European countries with more fluid leave programs than in the United States. As a result, the extent to which absenteeism or presenteeism could be predictive of longer-term absences in the future will likely be influenced by health and policy parameters.

5. Gaps and Needs for Future Research

Another important theme is that the existing literature is somewhat piecemeal, with several studies focusing on a particular health condition or analyzing the effects on in a particular workplace. As a result, there are several questions about absenteeism and presenteeism that would benefit from future research. While creative researchers in the U.S. have found ways to glean information about absenteeism rates from a variety of nationally representative surveys, this literature would benefit from a systematic analysis comparing the specific questions asked across these surveys, and a systematic comparison of absenteeism rates between them. Such an analysis would develop a broader understanding of baseline absenteeism rates based on a representative sample of U.S. adults, rather than the specific surveys conducted in the context of one employer. As highlighted several times in this volume, the evidence on absenteeism, presenteeism and longer-term spells of absence is much more established in the European context. Some of this is due to the institutional parameters of social insurance in most European countries. Sick leave and disability benefits are often standardized across employers and

administered as one system, enabling collection of large datasets, and allowing for analyses of transitions between the two programs.

Additionally, there is little evidence about the progression of absences over time, or the extent to which this progression could indicate a growing health problem. Even studies that conducted follow up surveys only tend to collect data on absenteeism at the baseline and end point of the study, with little information about the trends in between these two points in time. Given that the literature demonstrates considerable heterogeneity in absence rates depending on worker characteristics, the progression of absences may well be as important as, or more important than understanding absence rates at any given point in time. Further analysis of panel surveys such as the HRS, which are often used to show the progression of health over time, may provide somewhere to start in developing more information on this topic.

Ultimately, the ideal study of the extent to which absences may predict future disability spells may require a match between some administrative or survey records on workers to disability records in the U.S., which has yet to be done. In addition to linking to disability records, analysis of absenteeism and presenteeism in the U.S. context is challenging because sick leave itself is not standardized, and employers offer different types of benefits and track absences in different ways. Another possible step towards this ideal would be to collect comprehensive data on absences, perhaps in tandem with data on paid leave through outlets such as the National Compensation Survey, administered by the Bureau of Labor Statistics. A combination of efforts such as these will move towards a greater understanding of worker absenteeism and its effect on labor market outcomes and disability transitions.

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Table 1. Publicly Available Surveys with Measures of Absenteeism/Presenteeism

Data Set	Measures	Strengths	Limitations
American Time Use Survey (ATUS), 2011 Leave Supplement	Days missed from work in past week for own illness or medical care (and other reasons), separately for paid and unpaid; days and reasons "needed to take leave but did not"	Nationally representative of U.S. working age population	One time cross section; reference period=week
American Working Conditions Survey (AWCS)	Days absent from work for health-related reasons in past 12 months, separately for paid and unpaid; days worked while sick in past 12 months, and % reduction in work performance; work-limiting health conditions and workplace accommodations	Nationally representative of U.S. working age population in 2015; six-month follow-up (all ages) and one-year follow-up (ages 50+); planned three-year follow-up (all ages)	No long term (> three years) measures (as of yet)
Health and Retirement Study (HRS)	Days missed from work because of health in the last 12 months; access to paid sick leave; rating of current ability to work (2008-)	Longitudinal data collected every two years, 1992-present (with some exceptions)	Representative of 50+ population only; limited presenteeism measures
Medical Expenditure Panel Survey (MEPS)	Days missed from work due to illness or injury (and other reasons); access to paid sick leave; short term work outcomes	Nationally representative of U.S. working age population; Limited panel (two years); includes medical provider component	No measures of presenteeism; no long term (> two years) measures
Midlife Development in the U.S. (MIDUS)	How many days "totally unable to work" and "did you have to cut back on work" because of physical or mental health in past 30 days	Nationally representative of U.S. 25-74 year olds in 1995-96; follow-up data collection in 2009 and 2013	Original data collected in 1996
National Comorbidity Survey (NCS)	Work days missed, % reduction in work performance, in last 30 days	10 year follow-up of original respondents	Mental health only; original data collected in 1990
National Health Interview Survey (NHIS)	Days missed from work in past 12 months due to illness or injury; access to paid sick leave	Nationally representative of U.S. working age population	Repeated cross section; no data on paid vs. unpaid days, presenteeism

Table 2. Search Terms and Databases Searched

Search Terms	Databases
absenteeism	Google Scholar
absenteeism presenteeism	Econ Lit
predictors of absenteeism	EBSCO
health predictors of absenteeism	JStor
predictors of presenteeism	Social Science Abstracts
health predictors of presenteeism	Psych Info
sick leave	
sick leave disability	
sick leave disability pension	
long term sick leave disability	
sickness benefits	
sickness benefits disability	
sickness benefits disability pension	
chronic conditions AND absenteeism	
chronic conditions AND presenteeism	
absenteeism AND united states	
absenteeism AND disability AND united states	

Table 3. Selected Statistics on Absenteeism and Presenteeism in the General Population

Study	Data Sources	Sample	Statistics	Measured frequency
Kessler et. al. 2001	Midlife Development in the United States, 1995-1996	US Adults, 25-54, (n = 2,074)	<ul style="list-style-type: none"> • 17.5 percent reported one missed work day in the past month • Unconditional (conditional) mean missed work days: 1.1 (6.3) • 20.2 percent reported a cut-back work day in the past month • Unconditional (conditional) cut-back days: 1.1 (5.4) 	Absenteeism/reduced productivity in the last 30 days
Boles et. al. 2004	Survey data from an online health assessment, including WPAI questionnaire, 2001	Employees at large US employer (n = 2,264)	<ul style="list-style-type: none"> • 1.8 percent reported absenteeism in the last week • 6.6 percent reported presenteeism in the last week 	Average absenteeism / presenteeism rates in the last week
Goetzal et. al. 2004	Medstat MarketScan Health and Productivity Management database; surveys on absenteeism and presenteeism, 1997-1999	Employees of 6 large companies in 43 states (n = 374,799)	<ul style="list-style-type: none"> • Average missed days per year range: 0.9 days/year (hypertension) to 25.6/year (for depression/mental illness) • Average unproductive hours per day ranged: 0.5 hours/day (heart disease) to 1.6 hours/day (migrane/headache) 	Average days missed per year or hours missed per day (standardized across data sources)
Burton et. al. 2005	Survey data - health risk assessment with work limitation questions, 2002-2004	US employees for large financial service company (n = 28,000)	<ul style="list-style-type: none"> • 11 percent estimated productivity loss due to presenteeism for individuals with 0 health risks, increases to 28 percent for individuals with 7+ health risks • Average increase in productivity loss of 2.4 percent for each additional health risk 	Reported productivity loss in last two weeks
Davis et. al. 2005	Commonwealth Fund Biennial Health Insurance Survey, 2005	US adults, 19-64 (n = 4,350)	<ul style="list-style-type: none"> • 64 percent took at least one sick day in a year • 20 percent took 6 or more sick days in a year • 50 percent reported at least one occasion of presenteeism in a year • 20 percent reported 6 or more occasions of presenteeism in a year 	Absenteeism/ presenteeism rates per year
Callen et. al. 2005	Survey data - health risk assessment, 2010	Employees at company based in Tennessee (n = 1,728)	<ul style="list-style-type: none"> • ~30 percent reported at least one day of presenteeism in last 4 week: • Unconditional mean: 0.5 days of presenteeism • 6 percent reported more than 2 days of presenteeism 	Reduced productivity rates in the last 4 weeks
Burton et. al. 2006	Health risk assessment survey, with questions about work limitations and productivity, 2002 and 2004	US employees of a financial services company, 18-64 (n = 7,000)	<ul style="list-style-type: none"> • 12 percent productivity loss due to presenteeism on average • Each risky behavior associated with 1.9 percent increase in productivity loss 	Reported productivity loss in last two weeks
Anesetti-Rothermel and Sambamoorthi 2011	MEPS 2007	US adults 18-64, (n = 13,000)	<ul style="list-style-type: none"> • Disability days per year ranged: 3.5/year (impulse control disorders) to 18 (stroke) 	Disability days (where respondent lost half or more of work day due to health) per year
Xu and Jensen 2012	HRS 2004-2006	US Adults 52-64 (n = 1,750)	<ul style="list-style-type: none"> • 11.5 absences per year 	Days missed due to health condition in last 12 months
Sherman and Lynch 2013	Employer database and health benefits survey , 2008-2010	Active Employees at large US employer, 18-64	<ul style="list-style-type: none"> • 8 absences per year on average for smokers • 6 absences per year on average for non-smokers 	Days missed per year (averaged over a 2 year survey)
Garcia-Serrano and Malo 2014	European Community Household Panel, 1995-2001	European households (n = 83,754)	<ul style="list-style-type: none"> • 1-2.9 absence days per year for individuals with disabilities • 0.5 - 0.8 absence days per year for individuals without disabilities 	Absence days per year
Ahn and Yelowitz 2016	NHIS 2005-2013	US Adults (n = 9,632)	<ul style="list-style-type: none"> • 3.7 (3.0) absences per year on average for workers with (without) paid sick leave • 13-17 percent report more than 5 absences per year 	Absences per year
Susser and Ziebarth 2016	American Time Use Survey Leave Supplement, 2011	US adults, (n = 6,354)	<ul style="list-style-type: none"> • 4.8 percent take sick leave in any given week • 2 percent go to work sick in any given week 	Average absenteeism / presenteeism rates per week

Table 4. Selected Statistics on Absenteeism and Presenteeism for Individuals with Specific Conditions

Study	Data Sources	Sample	Statistics	Measured frequency
Collins et. al. 2005	Online questionnaire, medical claims and company records, biometric data	Dow full-time active employees at five locations in Michigan and Texas with a chronic condition (n = 7,797)	<ul style="list-style-type: none"> • 0.9-5.9 hours of absence reported over last 4 weeks for those with a chronic condition • 17-36% reduction in productivity over last 4 weeks for those with a chronic condition 	Absence hours and reduced productivity over last 4 weeks
Kessler et. al. 2006	NCS, 2001-2003	US employed adults with bipolar disorder or depression (n = 3,378)	<ul style="list-style-type: none"> • 65.5 (27.2) lost work days per year for individuals with bipolar disorder(depression) 	Combined effects of absenteeism and presenteeism in a year
Howard and Potter 2014	NHIS, 2000 and 2010	US Adults 18+ employed within last 12 months with obesity-related chronic conditions (n = 18,860 - 2000, 16,626 - 2010)	<ul style="list-style-type: none"> • 47/41 percent reported at least one absence in the last year in 2000/2010 • Majority of workers with any absence report 2-6 days • Obesity associated with 94% (34%) higher absence rate in 2000 (2010) 	Days missed per year
Cohen et. al. 2015	OptumHealth Reporting short/long term disability claims data, 2005-2013	Employees from 41 large US companies with ulcerative colitis (UC) (n = 4,314)	<ul style="list-style-type: none"> • 8.8 (16.4) days of absenteeism per year for patients without (with) UC 	Absenteeism days per year
Peng et. al. 2016	MEPS 2004-2009	US adults 18-64 with depressive symptoms (n = 34,000)	<ul style="list-style-type: none"> • 3.5 missed work days per year on average • Depressive symptoms increased missed work days by 1.4 / year • Most severe depressive symptoms increased disability days by 4.5 days / year 	Disability days (where respondent lost half or more of work day due to health) per year
Banerjee et. al. 2017	National Comorbidity Survey, National Latino and Asian-American Study, 2001-2003	US adults 25-64 with a psychiatric disorder (n = 7,566)	<ul style="list-style-type: none"> • 1 day missed per month on average (conditional on employment) • Mental illness increases days missed by 1-2 days per month 	Absenteeism days in the past month

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